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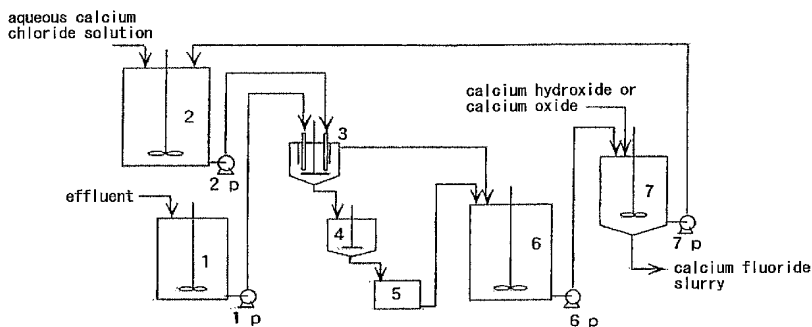
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(54) Title: METHOD FOR PRODUCING CALCIUM FLUORIDE, REUSING METHOD AND RECYCLING METHOD THEREOF



- 1 : effluent storage tank
- 1 p : metering pump for effluent
- 2 : aqueous calcium chloride solution storage tank
- 2 p : metering pump for aqueous calcium chloride solution
- 3 : crystallization tank
- 4 : calcium fluoride slurry tank
- 5 : centrifugal extractor
- 6 : mother liquid storage tank
- 6 p : mother liquid-sending pump
- 7 : aqueous calcium chloride solution-producing tank
- 7 p : aqueous calcium chloride solution-sending pump

(57) Abstract: To recycle fluoride by recovering calcium fluoride having a particle size and purity suitable for production of hydrogen fluoride, from a fluoride-containing effluent or a hydrofluoric acid-containing effluent. This method comprises reacting the fluoride-containing effluent or the hydrofluoric acid-containing effluent with an aqueous calcium chloride solution, under an acidic condition with hydrochloric acid where calcium fluoride has a comparatively high solubility. Calcium fluoride having a high purity and a large particle size can be deposited. The hydrochloric acid residues from the reaction or formed through the reaction is reacted with an inexpensive calcium compound such as calcium hydroxide, calcium oxide and calcium carbonate to produce an aqueous calcium chloride solution, and the aqueous calcium chloride solution is reused for the treatment of the hydrofluoric acid-containing effluent. The calcium fluoride obtained can be used as a raw material as it is for producing hydrogen fluoride, and the surplus aqueous calcium chloride solution can be supplied for other industrial uses.



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